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ABSTRACT

The Mount Gravatt Language Development and Reading Program described in this paper is the result of a conviction that teachers of reading and writing should build on the impressive and highly functional oral language system which children bring to their formal education for literacy. The paper first presents the language research on which the program is based, and then offers an account of the teaching materials and strategies into which the research outcomes were translated in classroom trials. The paper also contains a report on piloting the program. (FL)

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DEVELOPING A RESEARCH-BASED LANGUAGE/READING PROGRAM

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A PAPER PRESENTED AT THE ANNUAL CONVENTION

of the

INTERNATIONAL READING ASSOCIATION, HOUSTON, TEXAS.

MAY, 1978.

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I. INTRODUCTION

The research into child language[a] and, finally, the production of the Mount Gravatt Language Development and Reading Program resulted from a conviction that "literacy should be based on oracy"--that teachers of reading and writing should build on the impressive and highly functional oral language system which children bring to their formal education for literacy. I know that many teachers share our belief in that principle; but I would argue that it is just not possible to put it into operation without the kind of research that we have carried out. It is probably true to say that literacy is always based on oracy--children break through to mastery of the written form of the language only when the written language system they develop has become integrated with their oral system. But teachers are working in the dark, relying only on intuition to tell them if they are helping or hindering, when they do not know what typically constitutes the oracy of children at particular stages of maturation. At Mount Gravatt, we have spent a decade and something like half a million dollars seeking the insights into child language that we considered essential for the development of an oracy-based literacy program.

That, I think, is what is unique about the Mount Gravatt program: the fact that it is based on extensive language research, conducted specifically and single-mindedly for that purpose. The program itself has been developed only over the last four years. As a package of materials and strategies it is different from any other program; but no

single element, other than the language base, is new. The teaching strategies suggested are what we reasoned were the most appropriate and effective for our purposes from those already used and recognised in teaching reading. The result is that teachers will find themselves in familiar territory for the most part, as long as they understand the broad language principles on which it is based. It is the vehicle and route that are new, not the method of driving, or the destination.

The manuals, therefore, contain two components. The first, the language base for each level, is a product of research and is new. The second component, the teaching strategies and activities, has been developed and trialled by teachers in schools and probably would be seen by you as an amalgam of what you have found to be sensible and productive teaching strategies. This component can be readily modified according to a teacher's own preferences.

The first part of this paper is a description of the language research on which the program is based; the second part is an account of the teaching materials and strategies into which research outcomes were translated in classroom trials. Finally, I shall report briefly on the trialling and pilotting of the program.

II. THE LANGUAGE RESEARCH

Initially, we concentrated on building up an adequate child-language data base; and on extracting from it lists of the most-frequently-used units of language.. The next task was to investigate the use of those language units by children; and the final phase, one which still continues, is a rather comprehensive semantic/lexicogrammatic analysis of child language functioning at each of ages 5, 6, 8 and 10 years.

I shall outline the research in those four stages; but, since this is a Reading Convention and not a Language Research Conference, that outline will be brief and illustrative rather than comprehersive.

The Data Base

For each of ages 3, 4, 5, 6, 8 and 10 years, language was collected from a group of children randomly chosen from all those in the city of Brisbane[b] (population approaching one million) who were born in a particular month of the required year. Those children whose language ability was evidently above or below the average for their chronological age were excluded from each sample.[c] The language collected from each age group was that spoken by each of the twenty-two or so children and by those who spoke to that child during the whole of a randomly chosen day.

Throughout the day, the child wore a bandolier which contained a radio-microphone and transmitter with a range of up to 400 yards. The language transmitted was picked up and recorded on one track of a stereo cassette recorder, while a simultaneous running commentary of contextual information

was recorded on the other. To achieve the latter, we provided one of the two research assistants with a "roving" microphone and headset to enable him to move unobtrusively into positions from which to observe and comment on the child, and yet to hear, through the headphones, the language which his commentary was supporting. We trained the assistants to comment on :

(a) the physical setting and activity contexts of the discourse;

(b) participants in each conversational episode;

(c) the likely aims of the initiator of episode;

(d) the focus of speakers while speaking, and the actions of both the speaker and those being spoken about;

(e) emotional states of participants; and any other information considered by the commentator to be useful in interpreting the meaning of what the subject child had said.

All utterances of the child and of those who spoke to him were then transcribed onto every second line of a folio; and the context commentary was transcribed onto the alternate lines. To coordinate transcription of the commentary with transcription of the relevent language required only the setting of the stereo balance of the recorder so that the language track could be heard, at low volume, along with the commentary track. The language of each child was then coded for a computer concordance programme. Our data base then became :

(a) a concordance print-out of the child language;

(b) a folio consisting of the language of all discourse participants and a supporting context commentary; and

(c) audio-tapes of the language and context commentary.

All three were used in the "Phase 2" (final stage) analysis. Close to 70,000 words of child language were analysed for age five, 80,000 for ages six and ten and over 100,000 for age eight years.

The Language Analysis

For ease of reference, I shall place the analysis within the Hallidayan functional model,[1] set out in Figure 1 below. Halliday distinguished three levels of the language system--the semantic, the lexicogrammatical, and the phonological. What we call our "Phase 1" analysis relates to the lexicogrammatical dimension and is concerned chiefly with determining the lexical units with which children operate at the age level concerned.

FUNCTIONAL RELATIONSHIPS BETWEEN MEANING, CONTEXT AND FORM

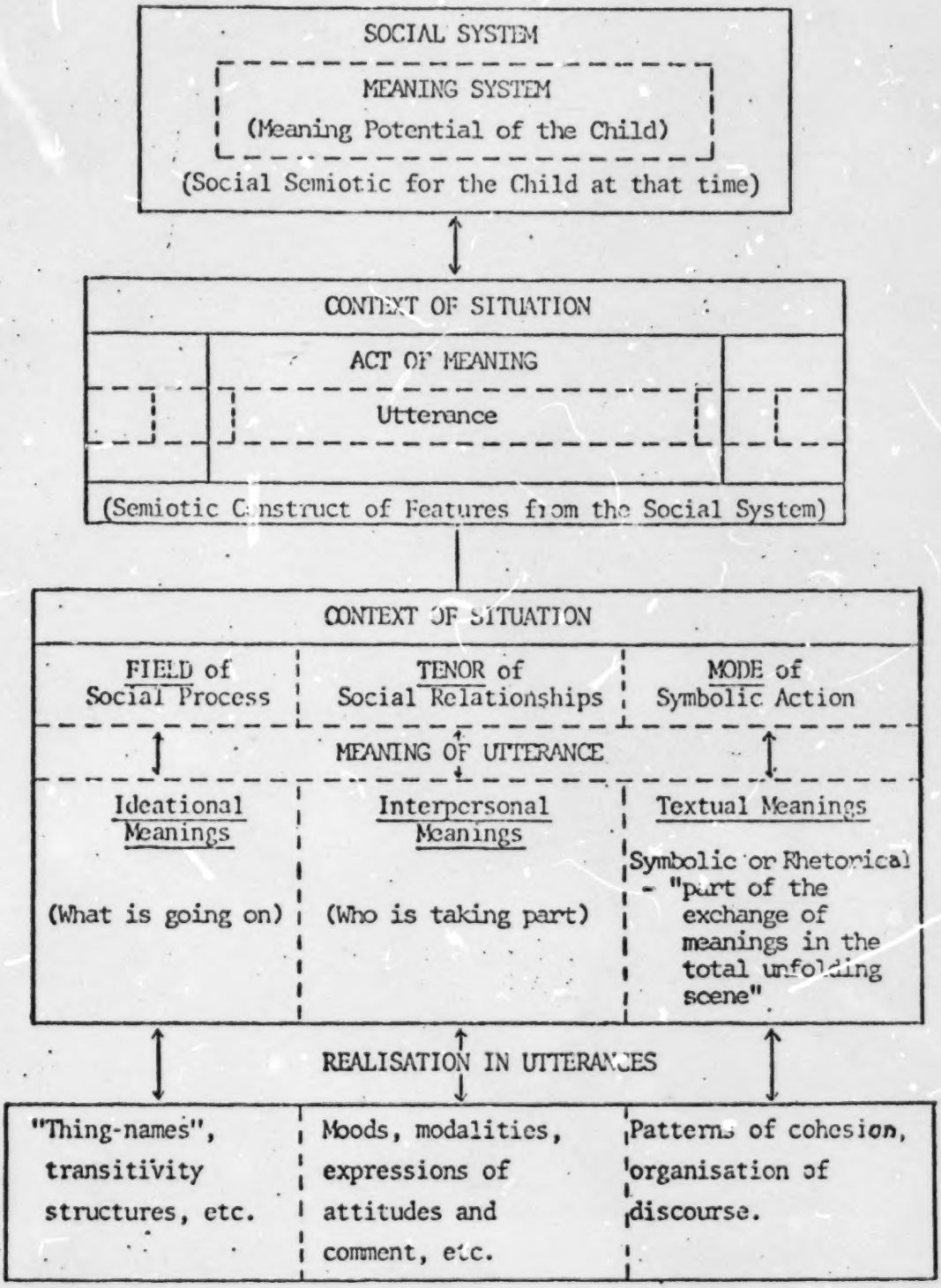
SOCIAL SYSTEM
MEANING SYSTEM
(Meaning Potential of the Child)
(Social Semiotic for the Child at that time)
CONTEXT OF SITUATION
ACT OF MEANING
Utterance
(Semiotic Construct of Features from the Social System)
CONTEXT OF SITUATION
FIELD of Social Process
TENOR of Social Relationships
MODE of Symbolic Action
MEANING OF UTTERANCE
Ideational Meanings
(What is going on)
Interpersonal Meanings
(Who is taking part)
Textual Meanings
Symbolic or Rhetorical - "part of the exchange of meanings in the total unfolding scene"
REALISATION IN UTTERANCES
"Thing-names", transitivity structures, etc.
Moods, modalities, expressions of attitudes and comment, etc.
Patterns of cohesion, organisation of discourse.

FIGURE 1

Lexical Units

It should not be assumed that children operate in oral language on the basis of "words" as we know them. When they come to school, and for some years afterwards, they have no clear idea of word boundaries. Indeed, there are no clear boundaries between "words" in the sound stream which constitutes oral language. Some units of child language, such as names for entities, actions and attributes, do happen to correspond with what will turn out to be words in written language; but the more difficult units, those which are fundamental to the rule system or patterns within which the "content" units readily slot in to form connected utterance, are not perceived as words.[2] Word boundaries become important only in written language functioning, particularly in writing. They are not uniformly detectable or recognised by a child in his oral language functioning.

To dismiss the notion that words are the functional lexical units in the language of children is to incur the obligation to identify the units on which children do operate. We did this by identifying those segments of language which, whether they be of one, two, three or more "words" in length, were used very frequently by all the children of an age level.[3] We had the aid of a very useful concordance program. A sample page of the output from this program is given in Figure 2 below.

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E . HEY SPAT LOOK AT MY LONG TAIL . ? WHAT . ? WHY .	I-M GOING HOME IN THAT WHITE CAR . +GOIN . WISH TWO YEAR	31314	51
DIANE . THE ONE THAT CAME UP IS DIANE . GUESS WHAT .	I-M GOING HOME WITH THEM TONIGHT BECAUSE THEY-RE AN STAY	5191	22
	609 1		
	611 1		
	4 MORPHEMES 2 SPEAKERS		
E . COM . OKAY NOW YOU-RE IN YOUR OWN SEAT . +YA . NO	I-M GOING IN MY OWN DESK . +GOIN . NO . +HIM . MATTHEW-S	31221	51
Y MANNY OVER THERE . OVER THERE ON THE TABLE . /PES .	I-M GOING LIKE THAT . GOODY I-M FINISHED . ? CAN I GO DO	58105	47
NOW . ELEPHANT . NO . THAT-S MR BROWN . I WILL . AND	I M GOING TO BACK TO NUMBER FOUR . /PES . +GONNA +TA . M	31312	46
US I SIT IN THAT ONE . I UP TO THE NEXT SIDE . /PES .	I-M GOING TO BE EARLY TODAY . MUM . YOUM AS . ? DO I HAV	54066	51
P . A " OF PARKER-SS . /PES . YUK . /PES . BE EARLY .	I-M GOING TO BRING A TWO CENT . AND PUT IT THERE AND SEE	7359	33
DANY . IPE IT ON PE . I NEVER EVER STEAL . NEVER XX .	I-M GOING TO CHUCK IT AT YOU . BEEP . YBEEP XX . I CAN T	7513	13
NY PICK ART FATHER NICE . HUMPY . PULL MY ZIPPER UP .	I-M GOING TO CLEAR YOU OUT MRY . +GONNA . YES YOU DID	60173	7
NT YOU GET DOWN THERE . DUMBELL . MR JUDD LESSON-SP .	I-M GOING TO COLOUR IN SAM . +GONNA . SISTER . THERE .	13096	36
+YEAH . YES DONT . QUERY STOP IT . IF YOU DO IT AGAIN	I-M GOING TO CRACK IT ON RUBBISH BIN . FOR BIG LUNCH	9124	45
THE LAST FIRST ONE . LOOK BOY . YOU-VE GOT IPEY ICE .	I-M GOING TO CRACK MY EGG . I-M GOING TO CRACK IT ON THE	9124	17
EE MY EGG . A GUESS WHERE I-M GOING TO CRACK MY EGG .	I-M GOING TO CRACK THAT ON THE BIN . +GONNA . QUERY . I	9166	30
. MUM DIDNT HAVE TIME TO SMELL MY EGG . A GUES / WHERE	609 3		
A'S-SP ARE OUT ALREADY . ALRIGHT . OO . YES . +YEAH .	5 MORPHEMES 1 SPEAKERS		
SAYS HERE . FINGER PAINTING . I DONT WANT THAT ONE .	I-M GOING TO DO A FINGER PAINTING . +GONNA . YES . I INT	52053	49
. NOT NOW . ? BUT VE USED TO DIDNT VE . NO . XXX XY .	I-M GOING TO DO A SPOTTED DOG . +GOIN . OH BOY . MY HAND	52080	48
	492 2		
	6 MORPHEMES 1 SPEAKERS		
E LEE SOPE . ? WHAT AREN'T YOU TEACH TOGETHER . /PES .	I-M GOING TO DO ALL THE DAY-SP OF THE WEEK IN RUNNING UP	59204	8
FINGER PAINTING . +GONNA . /PES . THIS ONE . I MEAN .	I-M GOING TO DO FIREWORK-SP . +GONNA . SHE-S HELPING AS	52061	16
WHAT BEGINS WITH CE INSTEAD OF ELEPHANT . I KNOW WHAT	I-M GOING TO DO FOR IN . +GONNA . NO . +MARGARET . WELL I	52024	35
EEP +BYE . SHE HEARD PE . YES . +YEAH . THIS IS WHAT	I-M GOING TO DO LINA . WHEN YOU GO HOME LEE AND MAUREEN	59056	6
SAY . BI XTHOUGHY WHAT . ONE ROSEN . O YOU KNOW WHAT	I-M GOING TO DO ON PE SISTER . +GONNA /PES . O YOU KNOW	7380	6
NO TO DO ON PE SISTER . +GONNA /PES . O YOU KNOW WHAT	I-M GOING TO TO ON PE MOTHER . +GONNA /PES . TWO ROSEN-S	7380	67
	607 2		
	6 MORPHEMES 1 SPEAKERS		
-SP . AU . I-M SEATING YOU . +SEATIP . LOOK AT THAT .	I-M GOING TO GO SEVEN THIS AFTERNOON . +GONNA . O HAVE I	7555	32
EE . ? HELLO . HOW ARE YOU . YUMMEE . O YOU KNOW WHAT	I-M GOING TO GO . +T . I-M GOING TO PUT PAINT ALL OVER Y	52073	36
	659 2		
	607 1		
	652 5		
	5 MORPHEMES 3 SPEAKERS		
R FINGER-SP . O COMING ANN . A SCOTLAND LADY . /PES .	I-M GOING TO DRAW A TRIANGLE AND A . LOOK WHAT I DID . O	52118	26
PLAY WITH YOU AND YOUR CAR-SP . OKAY . AND MICHELLE .	I-M GOING TO DRIVE THIS CAR . +GONNA . I-LL KEEP IT IN M	7265	12
. I-VE DROP MY MARBLE . /PES . LAND IN THAT PUDDLE .	I-M GOING TO DROP IT IN THE PUDDLE . +GONNA . OH I DROPP	10242	10
EEP . BEEP XX . OKAY . WAIT A MINUTE . GO TO SLEEP .	I-M GOING TO FALL OVER WHEN YOU WAKE UP . +GONNA . WHEN	10203	9
WELL I-M GOING TO TRY AND DO IT A GOOD WAY . +GONNA .	I-M GOING TO FIDDLE IT OUT MYSELF . +GONNA . ? CAN YOU D	8169	12
E . ? WHAT DO YOU CALL THIS STUFF MUM . +MA . CORAL .	I-M GOING TO FIX THIS CORAL DOWN THE SPOKE . THAT-S HOW	59024	37
E SHE-S CRYING . SHELLY . SHELLY . SHELLY . I KNOW .	I-M GOING TO GET A DRINK . ? WHO WANTS DRINK . /PES . CO	60084	38
EQUALS TWELVE . ONE TIMES ONE TWELVE EQUALS TWELVE .	I-M GOING TO GET A WHOLE ROW RIGHT . +GONNA . YOU HAVENT	11165	54
	460 1		
	611 1		
	6 MORPHEMES 2 SPEAKERS		
ES . DAVID . YOU GO DOWN AND GET THE CLEANING ONDUN .	I-M GOING TO GET ANOTHER DRINK . +GONNA . YES . SURE CAN	60050	9
LITTLE FINGER . AND ? WILL WE GO NOW . FINISHED . NOW	I-M GOING TO GET SOMETHING . ? MUM . CAN WE GO THIS NOW	60001	39
E . YOU WAIT HERE AND I-LL GO UPSTAIRS AND GET SOME .	I-M GOING TO GET SOMETHING . ALRIGHT YOU CAN WAIT THERE	59078	1
	659 1		
	660 3		
	611 1		
	5 MORPHEMES 3 SPEAKERS		
. IP . LEFT RIGHT IN . KLEFT XX . IE . GIVE IT TO ME .	I-M GOING TO GIVE IT TO HIM . +IT . LEFT RIGHT IN . KLEF	7349	9
WASHING MACHINE . +YA . +A . ? WHERE IS IT NOW . OH .	I-M GOING TO GO AND GET IT . +GONNA . +AN . OH BOY . WHA	8011	1
. KEEP THAT LIKE THAT TO SHOW DAD . OH YES . +YEAH .	I-M GOING TO GO AND LOOK THROUGH YOUR BOOK . +GONNA . ?	8029	52
	608 2		

FIGURE 2

SAMPLE PAGE OF COMPUTER PRINTOUT FROM THE LANGUAGE OF 6½ YEAR-OLD CHILDREN

The concordance program brings together in mid-page every occurrence of identical segments of language, each within its immediate language context. A number towards the end of each line indexes that particular occurrence back into its full language and situational contexts in the folio for that child. This allows us to investigate the lexicogrammatic rule and meaning quite easily for any occurrence of a word or sequence, even to listening to its being used on the audio-tape. The program also provides a count of the number of occurrences of any word or word-sequence and the spread of those occurrences across the children of the sample.

From the concordance, we compiled sequence lists, ordered by frequency index, for each of one-, two-, and three-word sequences. As shown in Table 1, below, the 100 most frequent single words alone account for some 60% of an entire corpus, so that, together with the frequent two- and three-word sequences, we are looking here at a high proportion of the language used. Add to that the classes of "contentives" with which children characteristically combine these sequences and you have covered virtually the entire corpus, in a systematic way, across all the children of a sample.

TABLE 1

PERCENTAGE OF THE TOTAL CORPUS ACCOUNTED FOR BY THE MOST FREQUENT SINGLE WORDS IN THE LANGUAGE OF CHILDREN (IN PROGRESSIVE STAGES).

Age Levels of Sample	Percentage of corpus accounted for by									
	first 10 words	first 20 words	first 30 words	first 40 words	first 50 words	first 60 words	first 70 words	first 80 words	first 90 words	first 100 words
2½	34	53	66	74	80	84	88	90	93	95
3½	24	36	45	52	56	60	63	65	67	69
4½	25	35	43	48	53	56	59	61	63	64
5½	24	34	41	47	51	54	57	59	60	62
6½	25	36	44	51	55	59	62	64	66	67
8½	24	35	42	48	52	55	58	60	62	64

Words and word-sequences occur with high frequency only if they are functionally very useful, that is, if they are used across a wide variety of situations. They could be said to constitute the "core" or most heavily used component of the child's lexical repertoire. It is essential that children gain firm control of this heavily used and essential component of language in the written mode at the earliest possible time. If they do--if they can transfer mastery of this functionally important "core" of language quickly and securely across to the written code--they will have gone a very long way, indeed, towards fluent and efficient reading and writing. To reason in the negative, if a child does not effect transfer of this "core" component of his functional oral system, then his written language system will be little more functionally useful than the oral system of a child who has not yet progressed to connected utterance. *Words of specific reference*, which I have called "contentives", are easily learned. They are "labels" and many children already have quite a fund of them, picked up from road signs, supermarket notices and the like, when they come to school. To learn them can be fun, and they can be very useful in relevant situational contexts; but literacy cannot be built primarily on such units. It must be built on the highly-functional "core" which is integral to the operative rule system on which connected communicative language is based. Learning a new "specific reference" word then becomes a relatively simple task of no great moment, and that new word and concept slots readily into a developing functional system

which is geared for use and growth. Tables 2A, 2B and 2C, show some of the words and word-sequences which appear to constitute the *functional core* of the language of children of six and eight years of age.

For teachers to have a working knowledge of this core of language, they need much more information about the use of these lexical units, including rules by which children seem to combine these units with one another and with other, less frequent units; but the consistency with which these units occur from age five onwards is remarkable. These are not the only units they use, but it seems that they are units they cannot do without--they are needed by different children of different ages in different situations. To begin here, when investigating the language rule system of children, seemed well worthwhile.

Lexicogrammatical Analysis

The first stage of investigating the rule system of children at each age level, therefore, was to determine how the frequently-occurring "core" sequences were used on the lexicogrammatical dimension of the language system. Figure 3, below, sets out the structural hierarchy which resulted from this examination.

E INTERPERSONAL LEVEL (SPEAKER 1 + SPEAKER 2 + ...)

D DISCOURSE LEVEL (UTTERANCE 1 + UTTERANCE 2 + ...)

C UTTERANCE LEVEL (I'M ... , BUT ... , BECAUSE ...)

B UTTERANCE SUB-UNIT LEVEL (I'M GOING TO SIT / ON THE GRASS)

A FUNCTIONAL UNIT LEVEL (I'M GOING TO (S.U.) + SIT (C.U.))

a. WORD (MORPHEME) + ... + ...

b. SYLLABLE + SYLLABLE + ...

c. PHONEME-GRAPHEME + ...

FIGURE 3

HIERARCHICAL LEVELS OF ANALYSIS

TABLE 2A

WORDS USED BY AT LEAST 90% OF ONE OR BOTH OF THE SIX- AND EIGHT YEAR SAMPLE GROUPS - FREQUENCY OF USE AND NUMBER USING

WORD	FREQUENCY 6-yr	FREQUENCY 8-yr	NO USING 6-yr	NO USING 8-yr	WORD	FREQUENCY 6-yr	FREQUENCY 8-yr	NO USING 6-yr	NO USING 8-yr	WORD	FREQUENCY 6-yr	FREQUENCY 8-yr	NO USING 6-yr	NO USING 8-yr
I	3950	4923	22	22	your(s)	364	433	22	22	lets	146	151	16	21
you	2595	3305	22	22	come	381	368	21	22	who	97	160	20	22
it(s)	2317	2795	22	22	look	359	415	22	22	about	90	105	21	22
is (+'s)	2141	2759	22	22	now	349	511	21	22	other(s)	95	117	20	22
's	1573	2078	22	22	put	329	304	22	22	these	94	97	20	22
is	568	681	22	22	them	321	361	22	22	from	66	117	20	22
the	1858	2284	22	22	for	307	405	22	22	those	66	117	20	20
to	1719	2155	22	22	down	304	377	22	22	getting	52	56	20	20
that	1515	1968	22	22	just	295	486	22	22	him	94	158	19	21
a	1357	1879	22	22	like	279	336	22	22	hear	134	176	16	20
and	1186	1881	22	22	see	282	394	21	22	again	73	138	17	22
one(s)	997	1120	22	22	be	281	419	21	22	hello	69	149	15	20
yes	973	1678	22	22	she	304	413	19	1	our(s)	95	141	17	21
no	928	1122	22	22	all	252	329	22	22	six(s)	99	141	13	21
on	905	903	22	22	did	244	302	22	22	were	62	134	18	21
what	882	852	22	22	when	229	256	22	22	eight	67	139	10	20
have(+'ve)	857	1215	22	22	was	236	490	22	22	way(s)	97	126	19	22
have	562	723	22	22	at	225	278	22	22	give	92	125	19	22
've	295	492	21	22	three(s)	226	229	21	22	day(s)	56	129	19	22
in	761	941	22	22	because	209	313	22	22	or	88	129	19	21
there	744	1030	22	22	with	209	239	22	22	mine	133	120	17	21
got	725	1138	22	22	how	226	276	20	22	book(s)	96	125	18	20
will (+'11)	708	782	22	22	but	202	323	22	22	haven't	94	113	19	21
will	123	131	19	21	over	200	269	22	22	went	81	114	19	20
'11	585	651	22	22	if	199	321	22	22	more	92	163	19	22
am(+'m)	682	761	22	22	off	215	185	19	22	bit(s)	52	111	18	20
'm	634	708	21	22	well	185	237	22	21	done	62	104	14	21
are(+'re)	680	1087	22	22	can't	190	238	21	22	us	92	98	18	22
are	269	453	22	22	things	184	225	21	22	boy(s)	103	101	19	21
're	411	634	21	22	some	167	151	22	22	really	34	106	13	20
this	655	868	22	22	has(+'s)	165	226	22	22	could	78	99	19	21
oh	647	1238	22	22	's	111	198	19	22	around	59	96	18	21
do	624	843	22	22	back	162	177	22	22	tell	85	89	17	22
can	603	648	22	22	take	177	131	20	21	another	73	93	17	21
get	594	701	22	22	good	173	200	20	22	alright	65	92	16	21
we	588	930	22	22	only	159	218	21	22	first	68	91	15	21
up	586	626	22	22	then	156	234	21	22	away	63	91	16	21
go	568	612	22	22	say	155	164	21	22	better	81	85	19	22
me	565	724	22	22	had(+'d)	144	278	22	22	into	75	91	18	20
my	553	700	22	22	had	110	225	21	21	goes	67	90	16	20
don't	549	756	22	22	why	157	148	20	22	any	66	83	18	21
going	487	602	22	22	right	156	310	19	22	last	45	82	17	21
here	502	597	21	22	little	133	177	21	22	been	44	75	16	22
know	476	780	22	22	so	139	230	20	21	coming	55	80	21	20
they	476	765	22	22	play	127	139	21	20	doesn't	67	80	17	20
of	461	640	22	22	too	126	169	20	22	an	48	72	19	21
not	428	569	22	22	said	124	163	20	22	need	53	73	14	20
where	425	329	22	22	time(s)	118	202	21	22	ready	38	72	10	20
hey	430	368	21	22	think	117	185	21	21	please	63	71	14	20
out	437	522	20	22	would(+'d)	128	165	19	21	much	42	69	16	20
he	391	580	22	22	didn't	115	194	21	22	even	50	67	17	20
want	388	318	22	22	something	116	128	20	22	still	36	59	15	21
two	369	391	22	22	big	114	114	20	22	real	39	57	12	20
					ah	-	272	-	21					

TABLE 2B

TWO-WORD SEQUENCES USED BY AT LEAST 90% OF THE EIGHT-YEAR SAMPLE COMPARED WITH USAGE BY THE SIX-YEAR SAMPLE

SEQUENCE	8-year Freq.	No.	6-year Freq.	No.	SEQUENCE	8-year Freq.	No.	6-year Freq.	No.
I'm	704	22	627	21	(I)'m going	172	22	191	20
I'll	388	22	400	22	on the	138	21	159	22
I don't	365	22	215	22	it in	45	20	57	17
it's	558	22	421	22	no I	102	21	91	18
I know	304	22	139	20	can I	159	22	150	19
I've	285	22	185	21	oh I	82	21	59	16
that's	591	22	367	22	what's	124	20	159	18
I got	224	22	175	22	do it	119	21	84	17
you're	265	22	190	21	to me	57	21	32	14
I have	149	21	132	20	( )'s in	47	21	29	13
I was	123	22	49	17	no you	71	20	47	18
you know	177	22	140	19	(I)'m not	97	21	98	19
I can	112	21	116	20	have a	97	20	82	19
I think	112	21	74	21	he's	110	21	56	17
you got	140	22	88	17	want to	185	22	237	21
I can't	103	20	72	16	come on	174	20	183	18
I didn't	93	22	53	15	yes it	36	21	19	12
you can	144	21	131	21	one of	54	20	62	17
( )'s a	214	22	152	21	what I	70	20	63	16
I want	81	21	151	20	of the	93	20	72	16
to do	165	22	114	21	out of	96	22	86	18
I just	71	22	39	15	( )'re not	85	20	58	13
I had	74	20	37	16	is it	73	21	83	18
( )'s the	156	22	126	19	are you	104	21	87	20
to get	147	22	114	21	in a	50	20	41	14
I haven't	66	21	48	15	up to	74	20	56	14
you want	103	20	83	19	don't want	56	20	56	17
and I	168	20	95	20	get a	64	20	31	13
you get	88	21	58	17	is that	63	20	56	14
got to	240	21	103	17	look at	103	20	82	21
to be	123	21	52	17	if you	132	20	84	18
you don't	80	20	68	18	like that	108	21	51	17
going to	399	22	360	22	did you	108	21	101	18
you've	76	21	44	14	up there	52	21	71	18
it was	88	21	53	16	where's	94	22	89	18
that one	125	20	158	20	of them	47	20	45	16
in the	223	22	205	21	because I	80	20	58	22
yes I	130	21	55	16	but I	86	22	41	18
there's	201	22	125	19	all the	64	21	59	17
got a	168	22	115	19	down there	65	20	46	18
to the	97	20	69	17	put it	65	21	91	18
don't know	227	22	108	20	if (I)	64	20	27	13
have to	223	22	178	14	when (I)	61	20	68	18
do you	199	22	180	21					
they're	206	22	130	20					
and then	90	20	46	14					
the other(s)	67	21	67	19					
we're	146	22	83	15					
a little	74	21	45	17					
( )'s going	70	20	48	15					
( )'ve got	264	22	182	21					
this is	143	22	91	19					

TABLE 2C

THREE-WORD SEQUENCES USED BY 80% OF 8-YEAR SAMPLE
COMPARED WITH USAGE BY 6-YEAR SAMPLE

SEQUENCE	EIGHT-YEAR		SIX-YEAR	
	Frequency	No. Using	Frequency	No. Using
I'm going	181	22	191	20
I don't know	203	22	93	18
I'm not	97	21	88	19
I've got	154	21	108	21
I don't want	44	20	46	16
that's a	55	20	43	15
(I)'m going to	127	22	167	20
( )'ve got to	62	21	40	11
it's a	63	18	46	16
that's the	59	19	42	13
you're not	51	18	39	13
you've got	51	19	32	12
( )'s going to	58	19	32	14

The "core" sequences of Tables 2A, 2B and 2C, were found to operate at one or more of the various levels of that structural hierarchy. At the *Minimal Functional Unit* level, sequences such as "I'm going to" were combined with units of specific reference such as "play" to form *Central Functional Units* such as "I'm going to play", and others such as"in the" combined with units of specific reference to form *Elaborative Functional Units* such as "in the water". That is :

Sequence Unit + Specific Reference Unit = Central Functional Unit

OR Sequence Unit + Specific Reference Unit = Elaborative Functional Unit

Units on this level were termed Minimal Functional Units because they are the smallest lexicogrammatic units in the formation of which an operative (combination) decision is necessarily involved in language functioning. Simple communicative utterances are formed on this level of functioning alone; and, in fact, the great bulk of the language of children from three to four years or so consists of these kinds of structures, that is, relatively unelaborated, simple sentences such as I have termed "Utterance Sub-Units" on Level B. At the next higher level (Level C), conjunctions, relative pronouns and the like are used to link sub-units of utterance as children learn to set one thought against another in a cohesive fashion; and so on up the levels to discourse and interpersonal episodes.

There is not time to comment on the levels of the structural hierarchy below the lexical unit; but it is clear that children soon work out generalisations for the use of morphemes such as "ful" or "ed" in combination with stems

of specific reference. The spread of such combinations, as in "careful", "awful", "playful" or "played", "pushed", and, in particular, unconventional ones, such as "runned" or "bringed", must be noted at this level of analysis.

In order to be brief, I have restricted my attention almost solely to structural analysis; but cohesion strategies and cohesive meanings are also of developmental significance, particularly at the higher age levels. Some aspects of cohesion analysis can be incorporated within structural analysis, and were noted in the "Phase 2" coding I refer to below. Other aspects of cohesion required separate analysis. Cohesion strategies assume major importance in respect to written expression in Levels 4 to 6 of the Language/Reading program.

Semantic Analysis

Because children do not operate on the semantic level independently from the lexicogrammatical level of their language system, it was necessary to analyse within a framework which interrelated syntax with semantics. The framework shown in Figure 4 was established from an extensive examination of the child language concordances. Each lexical unit expresses or elaborates a semantic element or semantic relationship. The three semantic clusters we have distinguished--the Basal Semantic Construct, Functional Focus, and Mode--correspond roughly to Halliday's three areas of meaning if cohesion meanings are clustered with Mode, as Halliday's model suggests they should be.

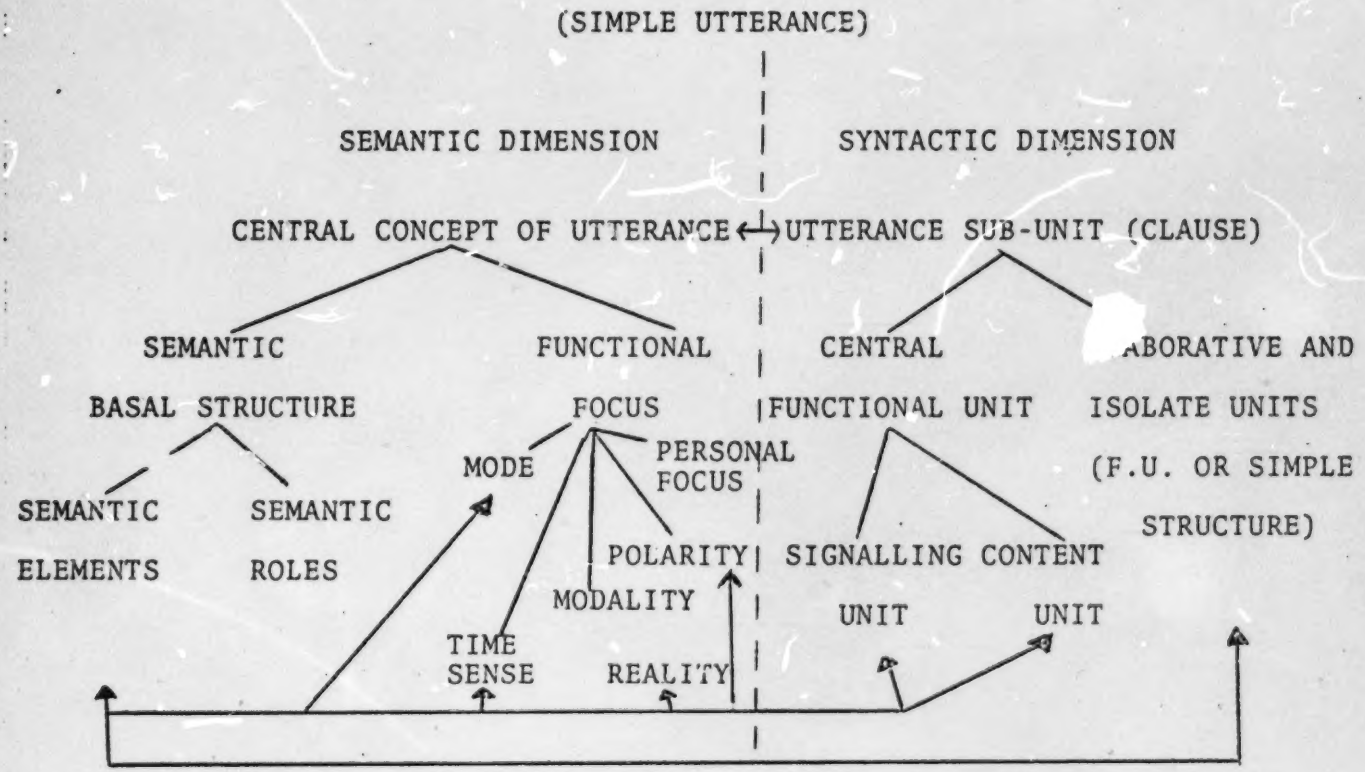

FIGURE 4

AN INTEGRATIVE SYNTACTIC-SEMANTIC ANALYTIC FRAMEWORK

The coding system was so constructed that each unit of language form, of whatever hierarchical level, was coded integratively for syntactic and semantic features including where it fitted into the operative language structure at the hierarchical level one higher than itself. To do this, of course, each utterance had to be coded on three or more levels.

The Meaning of an Utterance

The process of building up the semantic basis of a simple utterance was conceptualised as the putting together of semantic elements, familiar to the child because they were already constituents of what Halliday terms the child's *Social Semiotic*, in a configuration which arose from the situation in which the child was speaking. The resulting semiotic construct could, and often would, be one not previously conceived of by that child, because the act of meaning is essentially creative.

That component of the semiotic which consists of Entities, Events and States, and the relationships between them, is what we have termed the *Basal Semantic Construct* Other elements are Time Sense, constraints associated with Modulation or Modality, Personal Focus, Negation, Reality and Mode. All these are coded for each utterance and every unit of language is related to one of them or to cohesion meanings.

Semantic-Lexicogrammatic Coding

It is not appropriate to delve at length, in this paper, into the "Phase 2" coding scheme. A manual has been produced for use by our coders, so that anyone particularly interested in that aspect of our work may like to correspond directly with us. There is just one point I should like to make about the coding system before sharing with you a few of the outcomes. It is that, when the lexicogrammatical and semantic features of every utterance are coded integratively at several levels of the structural hierarchy, and elements at each hierarchical level are related to those on the level next above,

a data bank with great capacity is built up. The number of interrelationships and patterns you can extract from such a bank is limited only by the necessity to write further output sub-programs; and those interrelationships can be across the lexicogrammatical and semantic dimensions as well as intra-dimensional. Naturally the coding is complex; but a proficient coder can process about eighty computer lines of language per day. The coded language is reordered and stored via an input program, which includes a number of tests of coding accuracy. Once a language sample has been stored in this way, the data bank can be added to without difficulty, and output sub-programs can be run at any time.

We have written a separate sub-program for each question we want answered, and we usually have that question answered for each individual child as well as for the whole sample. There is, incidentally, no difficulty in bringing together a number of age samples to have comparative questions answered; but, to date, our comparative analyses have been derived from separate analyses for each age group. Some day we may combine all output programs into one; but, while we are generating new sub-programs, it is convenient to run each of them separately. They are brief and inexpensive.

The following few tables are each based on an output sub-program. The first two, Tables 3A and 3B, are purely statistical, but they reveal the extent to which eight year-olds build more clauses into the one utterance than do six year-olds. We have here a measure of semantic complexity but at only one level in the structural hierarchy.

SUBJECTS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	TOTAL GROUP
Total No. of Clauses	179	162	174	152	174	185	205	190	188	202	201	199	211	196	201	223	187	212	216	181	191	195	4224
Av. No. of Clauses per utterance	1.193	1.125	1.184	1.246	1.137	1.250	1.206	1.226	1.087	1.475	1.446	1.268	1.335	1.319	1.256	1.377	1.184	1.285	1.131	1.331	1.217	1.250	1.251

TABLE 3A

AVERAGE NUMBER OF CLAUSES PER UTTERANCE - 6 YEAR SAMPLE

SUBJECTS	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	TOTAL GROUP
Total No. of Clauses	132	171	117	156	129	159	169	154	166	170	150	138	145	129	168	151	161	151	168	136	144	144	3308
Av. No. of Clauses per utterance	1.365	1.541	1.162	1.368	1.265	1.278	1.271	1.375	1.186	1.308	1.1[illegible]	1.275	1.239	1.287	1.282	2.217	1.477	1.396	1.143	1.271	1.107	1.241	1.329

TABLE 3B

AVERAGE NUMBER OF CLAUSES PER UTTERANCE - 8 YEAR SAMPLE

An examination of semantic complexity can be carried to any hierarchical level of functioning. Tables 4A and 4B, show the average number of semantic elements per sub-unit (clause) in the six- and eight-year language. You will notice the almost identical average complexity for six and eight years on this measure; but there is more to it than that. Tables 5A and 5B, which set out information on structured elaborations, and Tables 6A and 6B, which relate to structured units expressing elements of the Basal Semantic Construct of utterances, illustrate the point that unidimensional measures of language complexity are often misleading.

SUBJECT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	TOTAL GROUP
Total No. Semantic Elements	816	766	830	634	788	905	920	841	835	894	899	791	875	697	889	940	693	894	907	818	851	864	18547
Total No. Utterance Sub-Units	179	162	174	152	174	185	205	190	188	202	201	199	217	196	201	223	187	212	216	181	191	195	4224
Av. No. Elements per Sub-Unit	4.559	4.728	4.770	4.171	4.529	4.892	4.488	4.426	4.441	4.426	4.473	3.975	4.147	4.577	4.423	4.215	3.706	4.217	4.199	4.519	4.455	4.431	4.391

TABLE 4A

AVERAGE NUMBER OF SEMANTIC ELEMENTS PER SUB-UNIT OF UTTERANCE - 6 YEAR SAMPLE

SUBJECT	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	TOTAL GROUP
Total No. Semantic Elements	541	787	543	710	760	700	699	695	754	734	641	691	639	577	738	733	691	656	759	556	654	629	14687
Total No. Utterance Sub-Units	132	171	117	156	129	159	169	154	166	170	150	138	145	129	168	151	161	151	168	136	144	144	3308
Av. No. Elements per Sub-Unit	4.121	4.602	4.641	4.551	4.341	4.402	4.136	4.513	4.542	4.318	4.273	5.007	4.407	4.473	4.393	4.791	4.292	4.854	4.518	4.088	4.542	4.368	4.440

TABLE 4B

AVERAGE NUMBER OF SEMANTIC ELEMENTS PER SUB-UNIT OF UTTERANCE - 8 YEAR SAMPLE

From Tables 4A and 4B, we might conclude that within clauses, semantic complexity remains constant from six to eight years. From Tables 5A and 5B, we can see on the contrary, that, in respect to the number of structured elaborating phrases, the complexity actually diminishes from six to eight years, while, as shown in Tables 6A and 6B, eight year-old children tend, to a greater extent, to express entities, actions and other focal elements via structured phrases.

It would not be helpful to go on producing tables which illustrate features of the language of children of various ages; but I want to follow just one aspect of many to illustrate that the sub-programs can go through from semantic features to lexicogrammatic features; how consistent are the outcomes from language samples of the size we have collected; and how it is possible to check whether apparent developmental trends are real or are the product of chance factors. Tables 7A and 7B, set out those Basal Semantic configurations found in six and eight-year language respectively, in which an Entity is related to a State. Examples are "I'm sick", "I'm getting sick", and "He looks sick". The first of those codes as Entity-Equate-State, the second as Entity-Become-State, and the third as Entity-Appear-State.

SUBJECTS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	TOTAL GROUP
Total No. Elaborative Units	166	116	138	72	146	169	157	149	152	154	232	129	152	146	154	130	115	153	142	179	128	133	3212
Total No. Utterance Sub-Units	179	162	174	152	174	185	205	190	188	202	201	199	211	196	201	223	187	212	216	181	191	195	4224
No. of Elaborative Units per Sub-Unit	.927	.716	.793	.474	.839	.914	.766	.784	.809	.762	1.154	.648	.720	.745	.766	.583	.615	.722	.657	.989	.670	.682	.760

TABLE 5A

TOTAL NUMBER OF ELABORATIONS AND AVERAGE PER UTTERANCE SUB-UNITS - 6 YEAR SAMPLE

SUBJECTS	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	TOTAL GROUP
Total No. Elaborative Units	89	113	91	104	97	100	94	123	110	83	87	127	114	82	120	176	97	120	120	94	98	97	2336
Total No. Utterance Sub-Units	132	171	117	156	129	159	169	154	166	170	150	138	145	129	168	151	161	151	168	136	144	144	3308
No. of Elaborative Units per Sub-Unit	.674	.661	.778	.667	.752	.629	.556	.799	.663	.488	.580	.920	.786	.636	.714	1.166	.602	.795	.714	.691	.681	.674	.706

TABLE 5B

TOTAL NUMBER OF ELABORATIONS AND AVERAGE PER UTTERANCE SUB-UNITS - 8 YEAR SAMPLE

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	TOTAL
Benefactive				7										1			3			1	2	5	19
Agent																							
Experiencer						1																	1
Patient	1	1	9			1														1			13
Circumstance				2								1		3			3			5	3	3	20
Location - Space	5	11	6	15	5	11	23	6	10	21	12	13	6	12	3	10	5	31	11	15	15	20	266
- Time														1						1	2		4
Reason				1													3						4
Manner											1			1		1		1	1	3		1	9
State - Identity		1		1							4	2			1		1						10
- Location	7	7	4	4		5		3	9			3	9	3	3	2	2			4		4	73
- Attribute			3	1	1	2	2	1	2	5	1		2	1	1	4	2	2	1	1	1		33
- Internal	1																				1		2
- Circum				1		1								1									3
TOTALS	14	20	22	32	6	21	25	10	21	26	18	19	17	23	8	17	19	34	13	31	28	33	457

TABLE 6A

STRUCTURED TERMINAL UNITS - SIX YEARS

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	TOTAL
Benefactive							1	3		2			1		4	1		1	3	1	1	3	21
Agent																							
Experiencer																	1						1
Patient	1				1		1	1											1				5
Circumstance		6	2	4			4	5				1	1	5	4		1	1	6			6	46
Location - Space	4	13	7	16	6	10	20	11	7	14	11	8	12	8	15	25	19	14	12	14	6	7	259
Location - Time		8	2	1	3	2	1	5	2	2	4	4	1	2	2	4	6	3	2	3	2	2	61
Reason		3	3				2		2				1				5		2				18
State - Identity	2	1												1									4
- Location	6	3	4	2	6	5	3	4	4	4	7	4	2	2	4	15	4	11	10	4	1	2	107
- Attribute	3	3		6	3	1	2	1	1			1	2	1	3	3	1	4	3	2	4	2	46
- Internal																							
- Circum															1	1	1	1	1	2			7
Manner	1				3		1		4		2	2	2				4	1			1		21
TOTALS	17	37	18	29	22	18	35	30	20	22	24	20	22	19	33	49	42	36	40	26	15	22	596

TABLE 6B
STRUCTURED TERMINAL UNITS - EIGHT YEARS

TABLE 7A

RANGE OF ENTITY-STATE CONSTRUCTS--QUARTER A--SIX & EIGHT YEARS

CONSTRUCT	SIX YEARS FREQ.	SIX YEARS % OF ALL CONSTRUCTS	EIGHT YEARS FREQ.	EIGHT YEARS % OF ALL CONSTRUCTS
Entity-Equate-State	1,027	25.4	1,141	27.1
Entity-Become-State	36	1.0	31	0.8
Entity-Appear-State	15	0.4	15	0.4
TOTALS	1,078	26.5	1,187	28.2

TABLE 7B

RANGE OF ENTITY-STATE CONSTRUCTS--QUARTER B--SIX & EIGHT YEARS

CONSTRUCT	SIX YEARS FREQ.	SIX YEARS % OF ALL CONSTRUCTS	EIGHT YEARS FREQ.	EIGHT YEARS % OF ALL CONSTRUCTS
Entity-Equate-State	997	23.6	1,113	26.3
Entity-Become-State	44	1.0	35	0.8
Entity-Appear-State	15	0.4	20	0.5
TOTALS	1,056	25.5	1,168	27.7

Table 7A is based on one quarter of the full sample for that age. There appears to be nothing very exciting happening from age six to age eight except about a ten percent increase in the number of Entity-State patterns as a whole and a tendency, not shown in this Table, to add an additional element to the Entity-State pattern. It is the consistency in the percentage of patterns of each kind and total of patterns from age six to age eight which is striking. To test that further, Table 7B shows similar data for another quarter-sample. The consistency is very evident indeed. We make a habit of taking out split-half correlations to test the sufficiency of sample size for whatever feature we are examining. It is only when we come to the use of comparatively rare lexical or semantic elements that we feel the need for a larger sample; never in what I have termed the "core" of language. In fact, for extracting core elements and features, one quarter of our present sample size of 100,000 words from 22 children would yield very similar results to those we obtain from the full sample. For the "Phase 2" analysis, however, we frequently need the full corpus and even other corpora.

Trends such as those suggested in Tables 5A and 5B, and 6A and 6B, are checked from the full corpora, and then from the language of the age next below and/or above, before we conclude that the trend is developmental. Table 8, which sets out the language units used to express relationships between Entity and State in the full six and eight year samples, illustrates the necessity to check apparent trends at higher and lower age levels. The suggestion from Table 8 that more

Entity-State links are coming into use at age eight to express more specific relationships between an Entity and a State (identity, location, or attribute) calls for checking from the ten-year corpus because of the small number of subjects using the new units in the eight-year corpus. The situations in which some of those words would be used are fairly rare, because we are dealing with words of specific reference; but they indicate at least a general trend which seems to have some relationship to cognitive development.

TABLE 8

ENTITY-STATE LINKS--SIX AND EIGHT YEARS

	FREQUENCY		SUBJECTS USING (N= 22)	
EQUATE	6 yrs.	8 yrs.	6 yrs.	8 yrs.
was	212	388	19	21
is	492	582	22	22
's	1,516	1,803	22	22
be	308	286	21	22
'm	184	107	16	15
are	204	322	21	22
'r	216	276	20	21
were	28	51	12	13
been	12	46	5	11
am	20	31	10	8
mean(s)	-	15	-	7
stands for	-	5	-	2
being	-	2	-	1
called	-	3	1	2
BECOME				
got	44	30	14	10
get	48	36	15	12
getting	28	15	9	5
came	8	5	3	1
go/goes/gone	12	30	5	12
turned (out)	-	10	-	3
APPEAR				
look(s)	40	28	12	8
sound(s)	2	8	1	4
feel(s)	3	8	2	5
taste(s)	-	5	-	2
smell(s)	-	3	-	3
seem(s)	-	2	-	1

There are many more sub-programs in the Phase 2 analysis, but I have probably said enough to indicate the kinds of information about child language that are available from the Phase 1 and Phase 2 analyses of our research. I should also mention that we are analysing the language used in books which children enjoy having read to them. We have also carried out a "Phase 1" analysis of the language used in the four basal readers most widely used in Australia and a pilot analysis of that used in daily newspapers and popular Australian periodicals published for women. It may or may not surprise you that the language used in the newspapers and periodicals intended for adult readers is closer to the oral language of children, even of five years of age, than is the language of the basal readers written for children of that age in respect to the core units of language.

III. THE LANGUAGE/READING PROGRAM[d]

This second part of the session was to have been presented by Dr. Norman Hart, who has been prevented by ill-health from being with us.

In turning to the Language/Reading program, itself, I want to remind you that children learn oral language as a functional system, one which is useful for the attaining of desired purposes; and that they learn language as a part of and along with purposeful interaction with other people. It seemed to us, in constructing the programme, that if children learnt the written form of language in a similar way, teachers of literacy might conceivably hope to approach the success rate of those who taught children their oral language. This seemed particularly crucial in beginning reading, while attitudes to written language were being formed.

Level 1 of the Program

To ensure that the earliest written language learnt was functionally useful to the highest possible degree, we based the first readers of Level 1 on those sequences which were frequent in the language of all speakers at all ages from 3 to 5 years--what could be termed the "core of core" for children of that age. Because we wanted success to be within the reach of all children, we worked with those units and meanings which seemed absolutely essential to functioning in connected language. We considered that enrichment could easily be provided by the teacher to the degree that individual children could cope. Each of the early books, then, is

based on the most functionally useful of sequences and those content words which arise from the topic of the book, with elaboration being gradually introduced in the later books of Level 1.

Since we believed that reading should not be set apart from other learning, we chose the topics of each Level of the program from concepts which children of that age should probably encounter across the whole range of the school curriculum. Level 1 includes thirty books and is spread across as many aspects of the child's world as is possible. Figure 5, below sets out the areas from which topics arose.

POSSIBLE RELATIONS BETWEEN THEMES USED IN THE MOUNT GRAVATT PROGRAM AND A SET OF GENERALISED EDUCATIONAL OBJECTIVES FOR GRADES I AND II

EDUCATIONAL OBJECTIVES		THEMES FOR THE PREPARATION OF READING BOOKS AND LANGUAGE PROGRAM						PERCEPTUAL TRAINING PROGRAM
		ME AND OTHER PEOPLE	ME AND THE ANIMATE WORLD	ME AND THE PHYSICAL WORLD	ME AND WORKING THINGS OUT	ME AND MAKE BELIEVE	ME AND EXPRESSING MYSELF	
SOCIO-EMOTIONAL	(1) Developing inner controls							
	(2) Developing the ability to interact with others in a constructive way							
	(3) Developing achievement motivation							
	(4) Developing curiosity							
	(5) Developing a creative approach							
	(6) Understanding the relationships between fantasy and reality							
PERCEPTUAL MOTOR	(7) Perceptual-motor development							
COGNITIVE — GAINING PHYSICAL KNOWLEDGE	(8) Developing an understanding of the animate world							
	(9) Developing an understanding of the inanimate world							
COGNITIVE — GAINING SOCIAL KNOWLEDGE	(10) Developing a concept of social systems and of self in relation to others							
COGNITIVE — GAINING LOGICAL KNOWLEDGE	(11) Developing an understanding of classification, seriation, number, space, time							
	(12) Developing an analytic approach to problem solving							
GAINING AN UNDERSTANDING OF REPRESENTATIONAL SYSTEMS	(13) Symbol level							
	(14) Language level							

FIGURE 5

Once a topic and the set of core sequences by which it could best be presented were chosen for a book, the writer had to meet two conditions :

(a) on both the lexicogrammatic and semantic dimensions, the language had to be within the capacity of children from three to five years;

(b) it had to be possible for teachers to provide a physical situation within the classroom from which both the sequences and the words of specific reference were likely to arise in normal, ongoing language activity.

The writer was not constrained in the size or nature of words of specific reference except that they had to refer to entities, events, or attributes which were within the physical situation to be set up. As indicated earlier, however, systematic testing of the language and the trialling of drafts of books with children always led to what, I am afraid, the writer considered an inordinate amount of rewriting.

One other procedure we use to test the language of our own readers is to tape record children reading a draft of each book and, from the recordings, to look for spots where they appear to have difficulty in predicting forward as they read. The procedure we use is, of course, a modification of Goodman's miscue analysis[4].

Teaching the Level 1 Program

It may be helpful at this stage to refer to Figure 6, which shows in diagrammatic form, the teaching sequence followed in the Level 1 program.

FLOW DIAGRAM FOR PRODUCTION OF LANGUAGE PROGRAM AND READERS

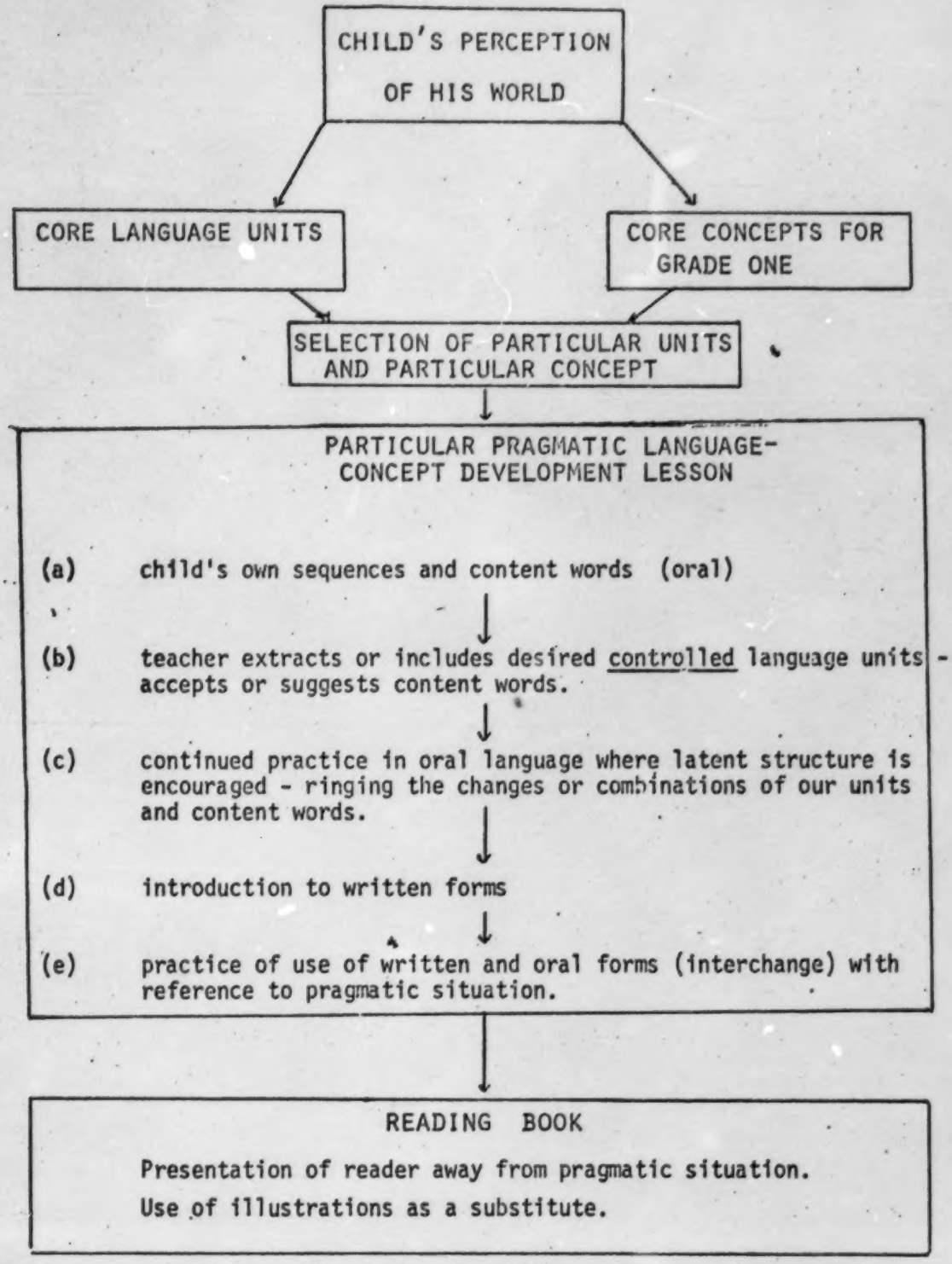
CHILD'S PERCEPTION OF HIS WORLD
CORE LANGUAGE UNITS
CORE CONCEPTS FOR GRADE ONE
SELECTION OF PARTICULAR UNITS AND PARTICULAR CONCEPT
PARTICULAR PRAGMATIC LANGUAGE-CONCEPT DEVELOPMENT LESSON
(a) child's own sequences and content words (oral)
(b) teacher extracts or includes desired controlled language units - accepts or suggests content words.
(c) continued practice in oral language where latent structure is encouraged - ringing the changes or combinations of our units and content words.
(d) introduction to written forms
(e) practice of use of written and oral forms (interchange) with reference to pragmatic situation.
READING BOOK
Presentation of reader away from pragmatic situation.
Use of illustrations as a substitute.

FIGURE 6

The teacher begins the program by normal teaching activities related to the topic of a book. She must, however, work within the physical setting for the topic, and while doing so, take note of and capitalise on spontaneous use by the children of core words and sequences which she knows are in the reading program for that topic. In the case of the book, "The Frog", she will probably have organised an aquarium with water, frog's eggs, tadpoles, and the like, to use in teaching the natural science topic "The Life Cycle of the Frog". The language sequences for the frog book are "It's", "I'm", "I'm going to", "I've got" and a few others. "Frog", "tadpole", "eggs" and "water", are of course, some of the words of specific reference. Those language units will be used spontaneously by children as they work within that situation. If, because of language handicap of some kind, a child cannot use the sequence units orally, then the teacher should remediate at that stage because any child needs to be able to use those highly functional sequences. New words of specific reference are readily learnt and used in these circumstances.

When the teacher is sure that the children can readily handle all the oral language units, she begins to substitute the written form of those units for the oral form; still as a component of purposeful activity and within the real situational context. When children use the units in oral language, they switch them around into whatever combination they need for their meaning purposes. For example, "It's a frog", "It's got green skin" to "It's a tadpole", "It's got four legs", or "It's got a big nose" to "He's got a big nose", or "He's got two legs"

and so on. The children readily learn to do the same with the written sequences and words as long as they are in the situation to which their utterance, and now their sentences, refer. To facilitate this kind of activity, printed cards are provided for the teacher together with spirit masters from which to run off smaller cards for the children to work with. Practice in real communication through creating new combinations of familiar written units is the heart of the program. We know from our research that each sequence is truly a unit which children use constantly in their language functioning; and each combination is meaningful because it has come from the children themselves, it refers to the observable context and has a real purpose. The interrelationships between oral and written language are firmly set up for each child, because of the constant interchange from communicating in oral form to communicating in written form. The children participate in a host of activities which involve formulating and reading written messages and stories during their everyday work. Children are given additional "specific context words" by the teacher as required. As long as competence is firmly achieved in putting together and reading combinations of the units set down for that topic, there need be no restraint on the adventurous. Of course, children do not all progress at the same rate and so small-group work becomes advisable.

When the teacher considers that the children are ready to go on to another topic and further language sequences, she presents them with the relevant book. Since it is written on a familiar topic and contains combinations of the language

units they have been working with, the children should be able to read it without difficulty whether or not some of the combinations in it are new to them.. All the sentences are just different combinations of very familiar units which have been worked with in many combinations. The reading gives the children the reward of success and enjoyment; and the teacher knows whether that portion of the highly useful core of language has been mastered in the written form along with a further fund of words of specific reference.

A program of word-attack skills is outlined in the Manual along with the language activities I have described; but we consider that this should not be started until about Book 10, and that it should be separate from the communicative language activities. We want children to develop positive attitude to reading and to regard written language as a means of communicating meaning. Yet they must develop the skills required to attack the many new "content" words they will encounter in their private reading. As reported later, we have found that children pick up word-attack skills very quickly when they have a practical need and use for them.

The Teachers Manual contains, for each book, useful language activities, songs, puppets and a list of story books on the same theme which are suitable for reading to children. The stage at which parents and teachers find children wanting to read these books for themselves is an indicator of progress towards independence in reading.

Level 2 of the Program

Since transfer to written language functioning at a basic communicative level, has been achieved on the Level 1 materials, the program is broadened at Level 2 to encompass a much greater proportion of what children of age six can do with language. Instead of creating a classroom setting for the topic, stimulus pictures, which represent key concepts for the topic, are now used as the basis for language activities. This is necessary because children of that age can speak of things and events removed from themselves in time and space; and, in any case, they should now be required to call upon the cueing systems, other than non-language context, to help them through to meaning. The language of the reading books now contains considerable elaboration, so that the children must practise using those "core" sequences, which have an elaborating function, again in oral and then written form and always in purposeful activities.

Another innovation at Level 2 is that the functional testing is done at two levels of difficulty. The first is by reading what we call a "core" story, which is one written on the same topic as the elaborated book, but at only Level 1 difficulty. The teacher will know from that test whether a child is capable of extracting at least the central meanings from the elaborated book before he attempts to read it. That he can read the language which carries the central meaning, ensures that he has a reasonable chance of extracting the peripheral information. Moreover, the technique tends to foster the primary use of meaning cues as well as language

and grapho-phonic cues. If a child fails at the second level of functional testing, the teacher knows what remedial measures to take in preparation for or along with the next section of the program, and the child has, in any case, obtained something worthwhile from his reading attempt.

Level 3 of the Program

In Level 3, the language is taken a further step forward in complexity, in correspondence with language development observed between six and eight years and the inclusion of units and structures found in an analysis of popular story books for children. The texts of the reading books now include combinations of clauses which are expressive of the logical relations between thoughts that we know they can process, and linked in ways that children of this age use in their oral language. Functional testing is again at two levels, this time using preliminary readers, written on different topics from the final reading books, but containing similar language structures at a lower level of complexity. Cloze procedures are also introduced in the workbooks of Level 2.

Systematic attention is now paid to spelling because the children are writing extensively. The first concern is to ensure that children spell accurately the sixty percent and more of their language which consists of words and sequences of words, which occur again and again. Word analysis activities can be aimed at spelling as well as word-attack skills; but the main attack on spelling should probably be through visual

memory of the core units of language. Teachers can use their own favourite method outside the core spelling.

The most important feature of Level 3 of the program is probably the start on training to read for different purposes, such as for information, for directions necessary to perform a practical task, and for clues to the solution of a problem. Three of the Level 3 books are set at Level 2 language difficulty level, to allow children to "see through" the language sufficiently to apply the meaning of what they read to particular tasks. This will be the first experience of most of the children in selecting appropriate information, while ignoring the remainder. Preparation for such a task will, of course, involve writing for specific purposes. The Level 3 materials are now being printed for publication.

Levels 4 to 6

The objectives and materials for these levels will be based on the analysis of oral language development to age ten; on analysis of the language used in children's literature; on analysis of the differences between oral and written language; and on research into the purposes of reading and writing which are appropriate to the later half of the elementary school years.

The great majority of children in our Level 3 trials achieved independence in reading and writing to the extent that they used the school library with seeming enthusiasm and success; and that they produced written stories which had originality, structure and flow. This kind of independence

could be said to mark the achievement of basic literacy. To ensure that every child reaches this level of competence, diagnostic tests and follow-up activities, both based on cloze techniques are provided in the Level 4 program. They should provide insights into the strategies that individual children are using while reading; and the means of overcoming weaknesses in those strategies. In general, Levels 4 through 6 will be aimed at developing reading and writing skills across the variety of purposes for which literacy is needed in the later elementary school years. In developing the materials for the later levels, we will again incorporate functional tests, so that teachers will know whether or not children need special help at any time in regard to particular literacy skills. We consider, with many others I am sure, that the majority of presently-available standardised tests of reading are inappropriate and misleading to teachers. As Robert Calfee has said, "They do not meet the needs of the individual classroom teacher for instruction".[5]

One basic concern throughout Levels 4 to 6 must be progressive mastery of the range of cohesion strategies by which skilful writers tie written language together to form a cohesive, economically worded text. Children should also develop some rudimentary skills in evaluating the quality of written and oral language against the purposes for which it was produced. The kind of literacy, which the program will aim at by the end of Level 6, will be multifaceted and differentiated for function. Children should, by that time, be fairly launched towards becoming truly literate people,

who are capable of exploiting the resources of written language in achieving a reasonably wide spectrum of objectives. The developing of Levels 4 through 6 of the program promises to be the most interesting and challenging task of all. We plan to have it completed, and the final level published by the end of 1980.

TRIALLING AND PILOTTING

The materials in the program--the reading books, the children's workbooks, the functional tests, and teacher materials--are all trialled during their development. Techniques for using the materials are also trialled during compilation of the Teachers' Manuals. This necessitates the production of trial materials and causes an interval of at least one year between the production of one level of the program and of the next. Lately we have been able to overlap the development of two levels through close co-operation with trialling schools.

We have maintained pilotting studies each year on a fairly tight research design. The first of these studies was also funded by the Australian Education Research and Development Committee; but all such subsequent developmental activities are now funded by the College out of royalties received. Our costs for the present year are $48,000. Also, a great amount of voluntary time goes into the work.

In addition, the Australian government provided funds in 1977 and again in the present year for the pilotting of the program with "close contact" Aboriginal children. The Australian Department of Education is also conducting its own trials of the program with Aboriginal children in country areas of a number of states of Australia.

Pilot studies of Levels 1 and 2 of the program by education authorities have been in progress in all the states of Australia since early 1977; and there is a flurry of

activity in the form of teachers' seminars and workshops, calls for journal articles, and requests to deliver talks which has taxed the human resources of our Language and Reading Centre.

The outcomes of pilotting by schools and school authorities in the various states have been almost embarrassing in that they have not revealed any negative comment. Application of the program has been extended from regular teaching to teaching migrant children, teaching adult illiterates, pre-school teaching, teaching the deaf and those with other physical handicaps, and teaching the educationally disabled. It is now used in hundreds of schools so that, since we provided the abstract of this paper, its use has spread well beyond our control or overview. We have been informed that a number of Canadian schools are also pilotting Levels 1 and 2 of the program; and I am looking forward keenly to being able to visit some of those schools.

Our own pilotting has probably been more structured and critical than that of others; but the following outcomes seem to emerge with a fair degree of consistency :

(a) children who learn through this program tend to transfer their skills and attitudes more readily to books outside the program;

(b) they tend to want to write earlier and produce more expressive and better structured "stories" than do those in other programs;

(c) significantly fewer children of lower ability fail to learn to read and write;

(d) children who transfer in from other schools fit readily into the program;

(e) the children in this program tend to enjoy and perform in less inhibited fashion in group dramatic and other expressive language activities;

(f) the program appeals strongly to teachers of migrant children, who report that it integrates, structures, and enlivens their oral and written language teaching tasks.

We consider that the first conclusive test of the program must be the percentage of children who attain independence in reading before the end of Level 3. Just as with all programs, the more able children achieve this well before that stage; but all children should do so before the end of their lower elementary school years. We have built cloze-technique diagnosis of the cueing systems of individual children into the Level 4 program for that reason. This, following on the two-stage functional testing of the previous levels, should ensure that teachers who use the program will know whether the skills needed for independence in reading are possessed by each pupil and how to remediate in cases where they are not. It is with some impatience that we await the pilotting of Level 4 of the program, because teachers throughout the country will have this invaluable data.

Two general conclusions regarding the teaching of literacy seem to arise out of our experience with the program. They are :

(a) there is a need to maintain a careful balance between the "activity" component and the development of

word-attack skills. In the early levels of any program, teachers should check that balance by observing the relative reliance which children place on each of the three cueing systems. The strategies they use can change over a surprisingly short period of time during the first year; and change can result in confusion at this crucial stage;

(b) in a highly unstructured learning environment, one program seems as good or as bad as another. The Mount Gravatt program results in oral language gains under those conditions; but better results with less able children appear to be produced by teachers who keep more closely to the program suggested in the Teachers' Manuals, thus setting up group language activities which are directed towards specific central purposes as well as self-directed individual activities.

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[3]For a description of the language collection and the output of the "Phase 1" analysis for ages 2½ to 6½ years, see Hart, N.W.M., R.F. Walker and B. Gray, "The Language of Children: A Key to Literacy". Boston, Mass.: Addison-Wesley, 1977.

[4]Goodman, K.S. and C. Burke, "Theoretically Based Studies of Patterns of Miscues in Oral Reading Performance". U.S. Office of Education, Final Report, 1973.

[5]Calfee, R., "New Ideas in Assessment of Reading Skills". Paper delivered at the International Conference on Reading, Singapore, August 1976.

NOTES

[a]This research was largely funded by the Australian Educational Research and Development Committee.

[b]The generality of the findings was checked against the language of English children, collected by Gordon Wells, University of Bristol, and of Canadian children, collected by Richard Handscombe, University of York, Toronto.

[c]The test used was the Illinois Test of Psycholinguistic Abilities; all those more than one standard deviation from the mean being excluded.

[d]Levels 1 and 2 of the program have been published by Addison-Wesley (Australia). Level 3 will appear this year, and Levels 4 through 6 during 1979-80.

[e]A number of teachers in Sydney schools have found the program very suitable for use in teaching migrant children.